

Evolving library services in the ever-changing world of chemical information: From printed to electronic to networked

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It Takes Two To Tango: Chemistry Librarians Partnering with
Publishers and Researchers To Advance the Chemical Sciences -
Symposium in Honor of Dana Roth
248th American Chemical Society Meeting
August 13, 2014
CINF-99

It is a distinct double honor to be here today – not only to be presenting in a symposium for one of the pioneers in our field, but also to be representing a history of library service evolution at Caltech, Dana’s home institution for almost 50 years. I would also like to acknowledge my co-authors, the other subject librarians at Caltech, who also have the pleasure of working with Dana.



California Institute of Technology

AAU member

~2200 students, ~300 faculty, 600 researchers

6 Divisions, ~25 Options

Biology & Biological Engineering

Chemistry & Chemical Engineering

Engineering & Applied Sciences

Geology & Planetary Sciences

Humanities and Social Sciences

Physics, Math and Astronomy



Sherman Fairchild Library

One of 5 libraries on campus

Opened in 1997, 24 hours

Serves all science & engineering disciplines

410,000 monographs (~7% electronic)

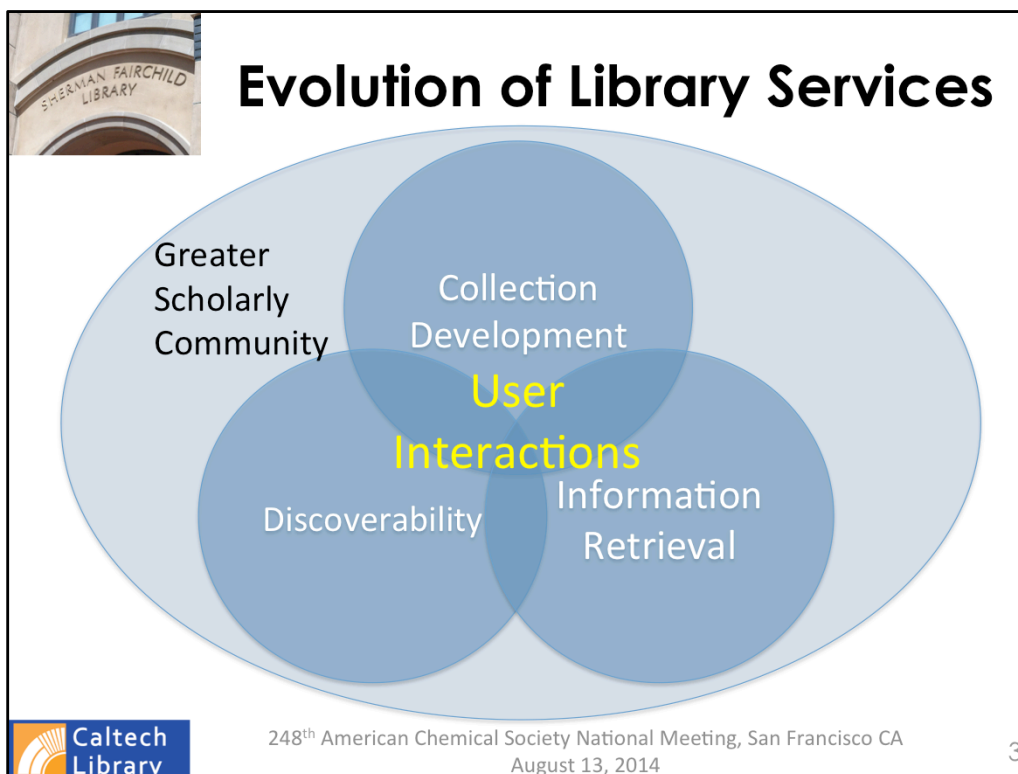
2,100 journals (90% electronic)




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A little bit about Caltech and the Caltech Library - we are an AAU member but not an ARL member. So, it is of note that we are a fairly small collection, and we focus on the current needs of our researchers and not so much on building a collection of record, and I've talked about those challenges at a previous ACS meeting. Of note though is that our electronic/print split does mirror most research institutions.



In thinking about the different areas of library service evolution and connection, it was hard to arrange them linearly to fit into a linear talk. In consultation with my colleagues, three main areas up for discussion in terms of services are collection development, discoverability, and information retrieval, and I'll talk about how our approach to each of these has evolved at Caltech. Ultimately the overriding concern between them is the user interaction with each of these things. And the "user" in our case is primarily Caltech faculty, students & staff, but at the end I'll talk briefly about how this expands to the world outside of Caltech – both in terms of the world accessing our materials, and how we work with one particular database for both our campus's benefit and the database's benefit.



Collection Development




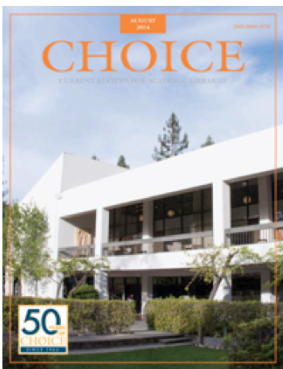

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Book and Media Reviews

Review of *The Physical Chemist's Toolbox*
[Hal H. Harris](#)
 Publication Date (Web): 1 Jul 2014
 pp. 1101–1102
 DOI: 10.1021/ed500430p
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Review of *NMR Spectroscopy: Basic Principles, Concepts and Applications in Chemistry*
[Kenneth C. Wong](#)
 Publication Date (Web): 5 Jun 2014
 pp. 1103–1104
 DOI: 10.1021/ed500324w
[ActiveView PDF](#) | [PDF](#) | [PDF w/ Links](#) | [Full Text HTML](#) | [First Page](#)

Review of *Molecules and the Chemical Bond, Volumes I and II*
[Jeffrey Kovac](#)
 Publication Date (Web): 14 Jul 2014
 pp. 1105–1106
 DOI: 10.1021/ed500191b
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Historically, reviews of new books for potential collection came **from reviews in scholarly journals**, and then eventually aggregate **review magazines** aimed at libraries, such as Choice. Today, **aggregator services** such as GOBI allow for viewing a wide range of titles available for purchase, as well as reviews when available. Sort of a one-stop shop if you will for collections librarians.



Collection Development

Suggest a book for purchase

Your Name (required):

Your E-Mail Address (required):
Please use your Caltech email address, if available

Your Caltech Affiliation: (required):
Choose an affiliation...

Book Title:

Recently Published Titles

(*) Denotes a Required Field.

Name (*):


Email Address (*):

Biofuel Crops: Production, Physiology and Genetics [Print Only], Singh (2014)
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Predictive ADMET: Integrated Approaches in Drug Discovery and Development
Urban (2014)
[More Information](#)

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However, these services, like any, are imperfect – once in a while important titles may get missed due to omission in these venues, or simply overlooked by the sheer volume of new work being published. At Caltech, patrons can suggest titles to be purchased, and Kristin and I have recently implemented an “Amazon-like one-click” form with newly published titles that we don’t deem as automatic fits for our collection, but want to make patrons aware that they have been published, and will purchase them on request. Of course we have always taken donations of appropriate materials.



Discoverability

BOOKS AND JOURNALS IN THE CHEMISTRY LIBRARY.
May 7, 1914

669.9 ^{aa1}	Aaron, O.H.	Assaying. ed.3.	
545.3 ^{a3}	Abegg, R.	Electrolytic dissociation theory.	1907.
543.8 ^{al5}	Allen, A.H.	Commercial organic analysis. ed.3,4v.	1901.
543.3 ^{am3}	American Public Health Assn.	Standard methods for the examination of water and sewage. ed.2.	1912.
542.5 ^{anoh}	Anon.	Practical use of the blowpipe.	1858.
41.3 ^{am6}	Arrhenius, Svante.	Electrochemistry.	1902.
541.2 ^{ai2}	Atomic weights.	Miscellaneous weights.	
543.4 ^{at8}	Aitfield, J.	Chemistry, general, medical and pharmaceutical.	1899
544.6 ^{s212}	Baly, H.C.C.	Spectroscopy.	1912. x /



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So, now that we are acquiring titles, how do we tell people what we own? This is part of a three page list (three!), organized by author, of books in the chemistry library. (I'm not sure when the Dewey numbers were added.) This was the earliest catalog I could find from the Chemistry library.



Discoverability

Jan. 25, 1926

Chemistry Department
books added to Chemistry Library since Oct. 1, 1925


Arrhenius	Chemistry in modern life.
Bassett	The theory of quantitative analysis.
Born	Vorlesungen über atommechanik. v. 1
Bragg	Concerning the nature of things.
Bridgman	A condensed collection of thermodynamic formulas.
Dauvillier	La technique des rayons X.
Deming & Aronson	Exercises in general chemistry.
Ellis	The chemical action of ultraviolet rays.
Euken	Fundamentals of physical chemistry.
Fourobort	Das osom.
Hamilton	Industrial poisons in the United States.
Haslam & Russell	Fuels and their combustion.
Hendel	Quantitative analysis.



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Updates were also issued periodically – this is an excerpt from an update list of books added between October 1925 and January 1926, and it was about one page of titles, about 30 or so. We'll see later just how much times have changed!



Discoverability

Dana L. Roth compiled and edited the 1970 edition of Serials and Journals in the C.I.T. Libraries, which was reproduced from magnetic tape to film by COM (computer output microfilm) techniques. He attended an

Results Page: [Previous](#) [Next](#)


Author Roth, Dana
Title Element/compound index to selected toxicology books in the CIT chemistry library
Imprint Pasadena [California Institute of Technology] 1973

Permanent URL for this record (appears in browser search box above)

Copy Status Related Titles Similar Items Full Record [Print Version](#)

Author Roth, Dana
Title Element/compound index to selected toxicology books in the CIT chemistry library
Imprint Pasadena [California Institute of Technology] 1973
Collation 1 v. (various pagings) 30 cm
Subject Toxicology -- Bibliography

LOCATION	CALL NO.	STATUS
Library Annex	RA1211 .R675 1973	IN TRANSIT

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When Dana came to Caltech as a librarian, one of his first projects was to organize the chemistry collection and make things findable. One way he did this was looking at books and journals, and noting where there were chapters of specific interest, or special journal articles or journal issues. We still have some of these custom indexed items in our catalog, along with Dana's custom guides.

Discoverability



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Of course, all the technology in the world doesn't substitute for the actual physical interaction of seeing something, picking it up, and leafing through it. New books and journals displays have been a part of the library for a long time – this image is from the old Engineering Library. Today, we try fun things like putting our carts outside on nice days, and we've seen a major uptick in stuff checked out. However...

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Really, we all want this – this is a digital display wall at the Hunt Library at NC State. It's awesome. And it speaks to a growing need of how to display and market ebooks, a problem we at Caltech, like many libraries, are struggling with. If you have any good ideas, please contact us ☺



Discoverability

Additions by Subject to The Book Collections of the Caltech Library
for July 2014

This page is updated periodically. This update: 01 August 2014

[Electronic Books](#) | [Journals](#) | [What's New This Month](#) | [Previous Months](#)

Anthropology · Art · Astronomy · Biology · Chemistry · Computer Science · Economics, Finance, Business · Education · Engineering - Aeronautics, Astronautics · Engineering - Buildings · Engineering - Chemical · Engineering - Electrical, Electronics · Engineering - General, Civil · Engineering - Mechanical · Engineering - Mining, Metallurgy · General Works · Geography · Geology, Earthquakes · History - Americas · History - World · Language and Literature - Afroasiatic, Semitic · Language and Literature - Greek, Latin · Law · Literature - American · Literature - English · Literature - General · Literature - Germanic ·


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(1-50 of 104)

New Books and Journals Added Last Week


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In the meantime, some of our electronic avenues are pages and RSS feeds alerting people to new materials each month, including specific categories such as ebooks. A new list that I worked with our Cataloging people to implement is a weekly new (and updated) materials list. Note that 104 items were added or changed in the last week, compared to the 30 items added over the course of 4 months that we saw earlier. This was designed for a very specific purpose...



Discoverability

NEW 'CHEMISTRY' BOOKS & SPECIAL JOURNAL ISSUES

January 2005

If you would like to borrow any of these books or obtain a photocopy of the contents of any of the special issues, please *** the items of interest and return to Dana Roth (dzrlib@library.caltech.edu).

The following list has been prepared for Chemistry and Chemical Engineering Faculty members, from books & journals added in the Millikan and Fairchild libraries during January 2005. The books are arranged within subject groups (i.e. Chemistry, Science, Physics, Molecular Biology/Medicine, Chemical Engineering/Materials Science) followed by the Special Journal Issues (Millikan).

Tuesday, July 22, 2014 at 8:31:02 AM Pacific Daylight Time


Subject: Caltech Library: New Titles, Classes & News for week of 7/21/14
Date: Monday, July 21, 2014 at 4:15:32 PM Pacific Daylight Time
From: CCE Division Office (sent by chemistry_other-bounces@caltech.edu <chemistry_other-bounces@caltech.edu>)

If you have trouble reading this email, please click here for a web version:
<http://libguides.caltech.edu/cceannounce>

Library News

Adopt-A-Text for Fall Term CLOSES NEXT SUNDAY 7/27! You can access Adopt-A-Test through your [access.caltech](#) account. If you have any questions about textbooks or other reserve materials, print or electronic, please do not hesitate to [contact me!](#)

My office hours / walk-in help schedule for the summer is available [here](#) - drop by if there is anything with which I can be of assistance to you!



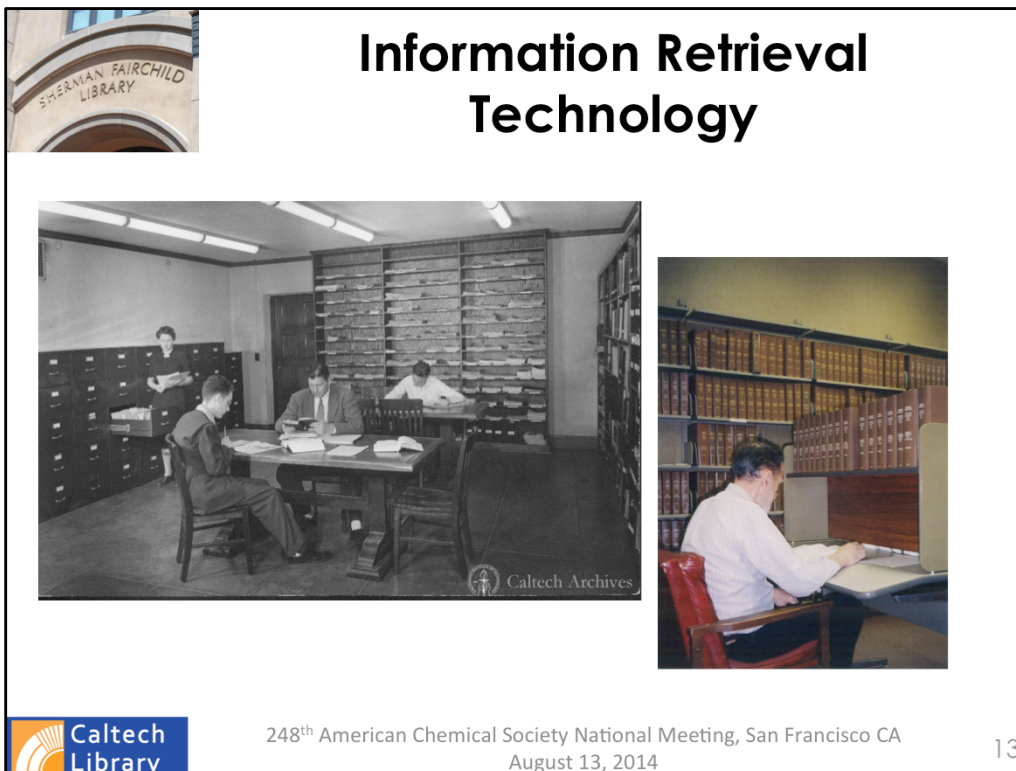
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..which was to continue and expand upon Dana's department newsletters. These would alert the division to new books, journals, and other changes and news of note related to the library. However, given the amount of material we acquire and the amount of news to communicate, including weekly instruction classes which I will touch on in a little bit, weekly emails seemed more timely. So, with the Cataloging-generated new materials list in hand, the Department Newsletters were relaunched with embedded HTML, providing instant access to ebooks and webpages. And although a fair bit of work, this has garnered very positive feedback.

Information Retrieval Technology



Caltech Library

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When we look at retrieval “technology”, initially one could say it was up to the individual user to go into the library, use the discoverability tools available (i.e. the aforementioned card catalog), and find what they needed. Here we see patrons in one of the old campus libraries, and Dana himself in the Gates Library looking through Chemical Abstracts. Caltech, like many academic libraries, had many different branch libraries across campus, which were consolidated in 1966-1967 with the opening of the Millikan central library.



Information Retrieval Technology


1973, have made it much easier to return books to Millikan. The Xerox request drop boxes on top of the book-drops, have proven to be one of the most popular features the library has ever initiated. From a beginning of just a few hundred requests filled in a month, their use has mushroomed to a record 2,208 requests filled in May 1974. Much of this increase is no doubt due to the reduction in the number of copies of subscriptions available because of cancellations. We have received many commendations from faculty on our attempt to fill all requests from volumes located on campus within the next 24 hours. The electric truck services all book-drops once



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Once Millikan opened and provided a central repository for books and journals, many duplicate print subscriptions were cancelled. The “DocuServe” Document Delivery Service was started in 1967 with the acquisition of a Xerox machine. Patrons could request photocopies of journals held in Millikan be delivered to their office for a small fee. This proved to be one of the most popular library services to date. In one sense this is analogous to the beginnings of the Internet – distribution of information from a central repository. This was also part of the beginning of the library providing more specialized services. Throughout the 70s and 80s, with the advent of computers and nascent network communications, librarians used database services after hours to conduct searches for patrons, usually taking advantage of after-hours academic rates.



Information Retrieval Technology

CALTECH LIBRARY SYSTEM

**GUIDE TO
ONLINE
SERVICES**


- CLAS
- TOC/DOC
- CD-ROM
- INTERNET
- DOCUMENT DELIVERY

TOC/DOC:
**“It Has Changed the Way
 I Do Science”**

Kimberly Douglas
 Dana L. Roth

developments. I can't stress too much how invaluable TOC/DOC has been to me and how it permits me to be very flexible in my research” (Marcus, 1996). ← **PROF. RUDY MARCUS**
NOBEL PRIZE WINNER, CHEMISTRY, 1992

“TOC/DOC: 'It Has Changed the Way I Do Science.'” Douglas, Kimberly and Dana L. Roth. Co-published simultaneously in *Science & Technology Libraries* (The Haworth Press, Inc.) Vol. 16, No. 3/4, 1997, pp. 131-145; and *Chemical Librarianship: Challenges and Opportunities* (ed: Arleen N. Somerville) The Haworth Press, Inc., 1997, pp. 131-145.



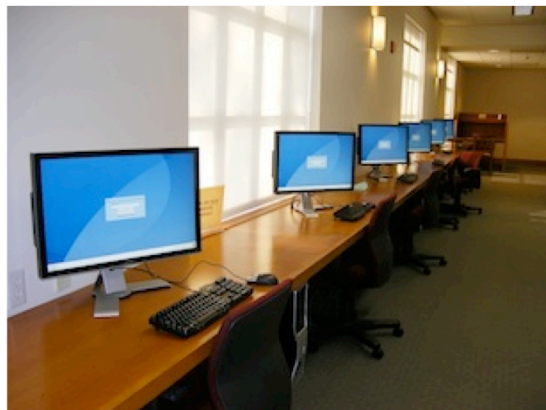
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Campus-wide ethernet came to Caltech in the early 80s. This led to the swing back towards users doing it themselves. TOC/DOC stands for Table Of Contents/Document Delivery, and was the result of integrating the ISI SciSearch database with Caltech's local journal holdings, something in which Dana was instrumental in developing. It was very well received as shown here, and was the beginning of the shift back towards user-performed searching.



Information Retrieval Technology



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With the proliferation of PCs and broadband/wireless internet, this has led to a proliferation of user-centered search tools, putting the technology and control back into users' hands. However....



User Interactions



Re: class visit
Donna Wrublewski
Sent: Tuesday, November 5, 2013 at 7:51 PM



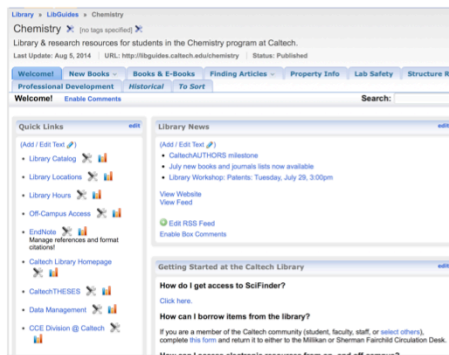
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...with all of these services, how do we teach others how to use it? How do we communicate to people that there is more to life than Google, and how to use better, more specialized tools to get them the information they need? Traditional reference desk interactions and phone calls – synchronous interactions – are augmented by asynchronous communications such as emails (at all hours of the day – or night). As reference librarians, we focus on fast turnaround and response time, harkening back to the days of DocuServe and mediated searching.



User Interactions



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In addition to one-on-one service, we teach classes, with the Chemistry ones being historically popular and still to this day among the more well-attended classes. Dana developed and taught many of them, changing and adapting with the tools themselves to best keep users informed on the best ways to use them. We have also started expanding this to research group visits and course-embedded instruction. Of course, in addition to synchronous in-person support, the Internet Age has allowed us to provide asynchronous support in the form of websites, posted handouts and guides, and the like.




Serving the Caltech Community...




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Our facilities, which include a Conference room and a Computer classroom, are available for the entire campus to use. Here's a demonstration being given to library staff in the Multimedia Conference room by James Malony and Julius Su, who run the Community Summer Academy for high school students here at Caltech, and they use library facilities pretty extensively. The classroom on the right has three Apple Air-equipped monitors, and eight dual-monitor workstations on moveable tables.



...and beyond!



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A Caltech Library Service

Caltech
codA

Home About Browse Simple Search Advanced Search

Login Search

Items where Research Group Name is "Resnick Sustainability Institute"

Up a level

Export as: Export

Atom RSS 1.0 RSS 2.0

Group by: **Date** | Item Type | Authors | No Grouping

Jump to: 2014 | 2013 | 2012 | 2011

Number of items: 46.

2014

Abrecht, David G. et al. (2014) *Spin-State Effects on the Thermal Dihydrogen Release from Solid-State $[M(H_2)_2]^{2+}$ ($M = Fe, Ru, Os$) Organometallic Complexes for Hydrogen Storage Applications*. *Journal of Physical Chemistry C*, 118 (4), pp. 1783-1792. ISSN 1932-7447. <http://resolver.caltech.edu/CaltechAUTHORS:20140129-130314711>

Liu, Yiyang et al. (2014) *Palladium-Catalyzed Decarboxylative Dehydration of Fatty Acids for the Production of Linear Alpha Olefins*. *Advanced Synthesis and Catalysis*, 356 (1), pp. 130-136. ISSN 1615-4150. <http://resolver.caltech.edu/CaltechAUTHORS:20140122-135551444>


2013

Webb, Michael A. and Miller, Thomas F., III (2013) *Position-Specific and Clumped Stable Isotope Studies: Comparison of the Urey and Path-Integral Approaches for Carbon Dioxide, Nitrous Oxide, Methane, and Propane*. *Journal of Physical Chemistry A*, ISSN 1089-5639. <http://resolver.caltech.edu/CaltechAUTHORS:20140113-090540183>

Herbert, David E. et al. (2013) *Heterometallic Triron-Oxo/Hydroxo Clusters: Effect of Oxidative Inertness*. *Journal of the American Chemical Society*, 135 (51), pp. 15075.

PUBLICATIONS

- Karanja, Kenneth K. and Lee, Eu Han and Hendrickson, Eric A. and Campbell, Judith L. (2014) Preventing over-resection by DNA2 helicase/nuclease suppresses repair defects in Fanconi anemia cells. *Cell Cycle*, 13 (10), pp. 1540-1550. ISSN 1538-4101. PMID PMC4050159. [Download](#)
- Ming, D. W. and Archer, P. D. and Glavin, D. P. and Eigenbrode, J. L. and Franz, H. B. and Sutter, B. and Brunner, A. E. and Stern, J. C. and Freissinet, C. and McAdam, A. C. and Mahaffy, P. R. and Cabane, M. and Coll, P. and Campbell, J. L. and Atreya, S. K. and Niles, P. B. and Bell, J. F., III and Bish, D. L. and Brinckerhoff, W. B. and Buch, A. and Conrad, P. G. and Des Marais, D. J. and Ehlmann, B. L. and Fairén, A. G. and Farley, K. and Flesch, G. J. and Francois, P. and Gellert, R. and Grant, J. A. and Grotzinger, J. P. and Gupta, S. and Herkenhoff, K. E. and Hurowitz, J. A. and Leshin, L. A. and Lewis, K. W. and McLennan, S. M. and Miller, K. E. and Moersch, J. and Morris, R. V. and Navarro-González, R. and Pavlov, A. A. and Perrett, G. M. and Pradler, I. and Squyres, S. W. and Summons, R. E. and Steele, A. and Stolper, E. M. and Sumner, D. Y. and Szopa, C. and Teinturier, S. and Trainer, M. G. and Treiman, A. H. and Vaniman, D. T. and Vasavada, A. R. and Webster, C. R. and Wray, J. J. and Yingst, R. A. (2014) Volatile and Organic Compositions of Sedimentary Rocks in Yellowknife Bay, Gale crater, Mars. *Science*, 343 (6169), Art. no. 1245267. ISSN 0036-8075. [Download](#)
- Budd, Martin E. and Campbell, Judith L. (2013) Dna2 Is Involved in CA Strand Resection and Nascent Lagging Strand Completion at Native Yeast Telomeres. *Journal of Biological Chemistry*, 288 (41), pp. 29414-29429. ISSN 0021-9258. [Download](#)
- Budd, Martin E. and Campbell, Judith L. (2013) Dna2 Is Involved in CA Strand Resection and Nascent Lagging Strand Completion at Native Yeast Telomeres. *Journal of Biological Chemistry*, 288 (41), pp. 29414-29429. ISSN 0021-9258. PMID PMC3795242. [Download](#)



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We monitor campus publications cited in **Web of Science** and report errors back to them to improve their records. We also use the citations to populate our **Institutional Repository**, the **Caltech Collection of Open Digital Archives (CODA)**. Faculty love this and use lists for their webpages. CODA recently added it's 40,000 publication and continues to grow in popularity. It includes journal papers, campus reports and publications, and PhD theses, for which we frequently get requests from all over the world to make them publicly accessible, if they are restricted.



Acknowledgements

- Caltech Archives
- Caltech Library



Dana Roth

<http://authors.library.caltech.edu/view/person-az/Roth-D-L.html>

<http://oralhistories.library.caltech.edu>



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Finally I'd like to thank the Caltech Archives, the Library, and Dana Roth. We are compiling a complete list of his publications in CODA, and will also be releasing his oral history later this year.

On a personal note I want to say what an amazing privilege it has been to work with Dana – it is very rare indeed you get to be mentored by the absolute foremost person in your field. Although it was a difficult decision on a number of levels to leave UF, this is truly a phenomenal opportunity, and the more I work with and get to know Dana, the more I relate to his philosophy on librarianship and am impressed by his dedication to the field. As a latecomer to the field, working with him has really made me feel like I've finally found my calling after many years in the wilderness.

Thanks to you all for being here and thanks of course to Dana! ☺